Silicic magmatism ~4.03±0.07 billion years ago. New hydrogen reservoir on Mars has also been discovered (anticipate a press release soon!).

Triangle) observed in the martian meteorites LAR06319 and Yamato Y980459, respectively (left). A hydrogen isotopic signatures of martian surface water (green square) and primordial water (red triangle) observed in the martian meteorites LAR06319 and Yamato Y980459, respectively (left). A new hydrogen reservoir on Mars has also been discovered (anticipate a press release soon!).

Hydrogen in the martian interior accreted from planetary building blocks similar to those that formed Earth, like chondritic meteorites, and not comets.

K-Ca Isochron for lunar granite indicates silicic magmatism ~4.03±0.07 billion years ago. Alkali feldspar from granitoids on the Moon have measurable water.

The initial $^{40}\text{Ca}/^{44}\text{Ca}$ composition when compared to primitive lunar crust (e.g., FAN 15415) indicates that it was derived from a relatively enriched source that has a K/Ca ratio (~0.7) that is equivalent to terrestrial andesite.

The silica phase has similar water contents as the blank obtained on anhydrous glass (~ 2 ppm). Water correlates with mineralogy. The alkali feldspar consistently has ~20 ppm $H_2O$. Using the published range in distribution coefficients of 0.0015 – 0.004 we obtain an estimate of 0.5 to 1.3 wt % water in the felsic lunar melt.

Integration of particle size analysis at micro and macro scales show that both CAIs and chondrules in Allende are much less sorted than previously reported.

Using the published range in distribution coefficients of 0.0015 – 0.004 we obtain an estimate of 0.5 to 1.3 wt % water in the felsic lunar melt.

A recently discovered martian meteorite expands our samples suite and thus our understanding of Mars.

Sm-Nd isochron yields evidence of volcanism on Mars ~2.3 billion years ago. Initial $^{143}\text{Nd}/^{144}\text{Nd}$ composition implies it was derived from a geochemically depleted mantle source. This time period in martian history has not been seen before in the rock record.

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